

## **Kewaunee County Groundwater Task Force Interview with County Supervisor Charles Wagner regarding his experiences with private well contamination.**

*As one part of the on-going effort to communicate the latest information regarding Kewaunee County's water concerns, Lee Luft, Chairman of the Kewaunee County Groundwater Task Force approached Kewaunee County Supervisor Charles (Chuck) Wagner and asked him a series of questions regarding his family's experiences with private well contamination. Supervisor Wagner was kind enough to share his experiences in the hope it will aid other residents who may have an unsafe water condition.*

Kewaunee County Groundwater Task Force – Lee Luft (KCGWTF): Supervisor Wagner, we have read that you have a well that is now unsafe for human consumption. Can you tell us about your experiences and how you are dealing with this issue? For example, how did you learn your well was unsafe?

Supervisor Wagner: Actually, we have had two wells drilled at our home. The first well was drilled when our home was constructed in 1996. Five years later in 2001, our daughter was having a baby and wanted us to have our well tested to ensure it was safe. We were aware that babies and small children are especially vulnerable to high nitrate levels in water so we went forward with the well test and this first well was found to be unsafe. We had a new well drilled in 2013 and as a firm believer in well testing, I went ahead and had periodic water tests on this new well. Unfortunately, the well tests conducted in 2015 confirmed that water from the new well was also unsafe.

KCGWTF: Is your well constructed to modern standards e.g. steel casing, proper depth, good drainage away from the well head, etc.?

Supervisor Wagner: Yes, the first well was drilled to all state codes by a reputable well drilling company in June of 1996. The well had to be cased to 60' due to the state code requiring that depth when drilling a well in an area that has less than 10' of topsoil over bedrock. There was no topsoil at the well site at the time of drilling. The well was drilled down to the next available aquifer at the depth of 123'. It started to show bad symptoms in the late fall of 2001. After fighting this well with all best-available environmental practices to make it better, we finally decided to have it sealed and to drill a new well.

The second well was drilled by another well drilling company who followed all state codes in the summer of 2013. During the drilling, which took seven days to complete, a WDNR water quality person was on site overseeing all aspects of the well drilling for five of the seven days. The new well was drilled to 304'. The casing was put down to 200' to ensure that we were way past the water stream of the first well which was at 123'. The mortar for sealing around the casing was slump tested to insure proper sealing between the drill hole and the casing. The lands around the new well slope away from the well head in every direction. Overall, the entire 79 acres I own are relatively flat.

KCGWTF: What are the contaminants that made your first (1996) well unsafe? Are these the same contaminants as in the second (2013) well?

Supervisor Wagner: The first well from 1996 had e-coli, coliform, enterococci bacteria, as well as the nitrate levels as high as 39ppm. High nitrate levels have now been found in our current (2013) well.

KCGWTF: Have you had well tests that have been negative or safe and then had the same well test unsafe over a relatively short time frame?

Supervisor Wagner: With the first well we attempted to eliminate the bacteria by bleaching the well which is the standard practice in the industry. That well would never stay clean for more than a week before the bacteria would return. Over the twelve year period the well was tested by four different universities for various contaminants. All of the results were bad except that the nitrate level did eventually get below the state safe limit of 10 parts per million, but the lowest level we achieved was about 7ppm. The second well tested perfect after the initial drilling and bleaching. In May of 2014 the new (2013) well tested 0.5 for nitrates and no detectable bacteria. In June of 2015 the well tested 6.5 for nitrates. In November of 2015 the well tested 9.4ppm for nitrates.

KCGWTF: Is there any predictability to when a well may become unsafe? Is digging a deeper well a solution to an unsafe water test?

Supervisor Wagner: The answer to the first part of your question is, in my opinion, no. There are no guarantees that any well will stay safe due to conditions changing on the ground around the well or within the aquifer you are drawing your water from. These changes may be miles away from the well itself due to the fractures in the Karst topography that makes up the Niagara Escarpment here in many parts of Kewaunee County. Clearly I thought, as did the well driller, and the representative from the DNR, that the second deeper well with casing to 200 feet would solve our problems, but it did not.

KCGWTF: What conditions do you feel are contributing to your private well contamination e.g. vulnerable geology such as shallow soils and Karst bedrock, significant manure application in proximity to your well, septic issues, ineffective drainage near your well head, etc.?

Supervisor Wagner: In my opinion, the simple answer is that there is too much liquid manure being applied to soils that are too shallow to adequately filter the nutrients and contaminants in the manure. The nutrients do not have enough time to filter out in the soil before hitting the cracks in the bedrock. Now that I have received the results of viral testing done on my new well showing that the nitrates are in fact from bovine manure, there is little doubt as to what the problem is. Also, with regard to the septic system on our property, I can say that our septic system was installed with more than the required amount of filtration and is inspected every three years as required by state codes. Two different state inspectors have told me they doubt very seriously my septic system could be the problem. The viral testing confirms that point. My well is drilled almost in the middle of my west forty of my 79 acre property. The nearest manure applications are 200 yards to the south, sixty acres to the east and almost forty acres to the north.

KCGWTF: How is having unsafe water from your private well impacting your daily life and the lives of your family?

Supervisor Wagner: We started purchasing bottled water in five gallon and one gallon jugs when the first well went bad. There were times during that period that we did not take showers or even wash white clothes in it when the water would turn brown. We would wait a few days and then it would clear up enough to at least wash in it. We never drank the water or used it for cooking. We also could not use the ice cubes from our refrigerator.

Since drilling the second well and now finding out the nitrate level is going up, we had a state approved Reverse Osmosis system installed so that we have filtered water going to the ice maker and a separate spigot at the sink in our kitchen. We continue to purchase 5 gallon jugs of water. We have not allowed any of our grandchildren to even bathe at times during the first well. We also inform any company to only use water from the filtered spigot.

KCGWTF: Going forward, what actions will you take to deal with the unsafe water conditions in your home?

Supervisor Wagner: We will continue to participate in the county-wide well testing program. As part of that program my well will have some testing equipment added to it to monitor the water 24-7. The UW-Extension is installing this equipment to monitor water quality changes as they may pertain to weather events.

KCGWTF: What actions would you recommend others take who have not had their well(s) tested?

Supervisor Wagner: My strongest suggestion for everyone I've spoken with about this issue is to have your well tested every 15-16 months. Why 15-16 months? In this way you are checking at different times of the year. The conditions of your well will change constantly and maybe even very rapidly. By having it tested at different seasons of the year, you will get a better overall picture of your well's water quality. A lot of people say to me, "I don't want to have it checked because they'll make me drill a new well". **That is simply not true!** No agency in this state can dictate any private well to be sealed and tell you to drill a new well. It is up to you. For your sake and the sake of your family, wouldn't you want to know that your water is OK to drink? "There is no life on this planet without clean drinking water."

*The Kewaunee County Groundwater Task Force wishes to thank Supervisor Wagner for his thoughtful and candid comments on his experiences with unsafe private wells.*